

REMARKS

At the outset, Applicant thanks the Examiner for the thorough review and consideration of the subject application. The Final Office Action of December 12, 2003 has been received and its contents carefully reviewed.

Applicant hereby requests entry of the amendment to claim 24 and newly added claims 27-32. With respect to new claim 32, it is respectfully submitted that none of the cited references, either singly or in combination, teach or suggest "a sheet material between the light guide and the second substrate, wherein the sheet material includes an uppermost sub-layer, and wherein the uppermost sub-layer is set apart from... [a] lamp housing [surrounding a lamp and arranged on a portion of the light guide]."

In the Final Office Action, the Examiner rejected claims 1-8, 10-23, 25, and 26 under 35 U.S.C. § 103(a) as being unpatentable over the related art shown in Figures 1 and 2 in view of Suzuki et al. (U.S. Patent No. 5,739,880); and rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over the related art shown in Figures 1 and 2 in view of Suzuki et al. and further in view of Kashima et al. (U.S. Patent No. 6,504,589). The aforementioned rejections are traversed and reconsideration of the claims is respectfully requested in view of the following remarks.

The rejection of claims 1-8, 10-23, 25, and 26 under 35 U.S.C. § 103(a) as being unpatentable over the related art shown in Figures 1 and 2 in view of Suzuki et al. is traversed and reconsideration is respectfully requested.

Independent claim 1 is allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. in that claim 1 recites a combination of elements including, for example, "a second substrate having first and second surfaces, wherein the first surface is disposed against the first substrate; a non-transparent film coated on a periphery of the second surface of the second substrate... and a sheet material disposed between the light source and the second substrate, wherein at least a portion of one edge of the sheet material is not directly under the non-transparent film." Neither the related art shown in Figures 1 and 2 nor Suzuki et al., singly or in combination, teach or suggest at least these features of the claimed invention. Accordingly, Applicant respectfully submits that claims 2-8 and 10-14, which depend from claim 1 are also allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. Moreover, it is

respectfully submitted that claim 27 is allowable at least by virtue of its dependence from claim 1.

Independent claim 15 is allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. in that claim 15 recites a combination of elements including, for example, “providing a second substrate having first and second surfaces, wherein the first surface is disposed against the first substrate; coating a non-transparent film on a periphery of the second surface of the second substrate...; and disposing a sheet material between the light source and the second substrate, wherein at least a portion of one edge of the sheet material is not directly under the non-transparent film.” Neither the related art shown in Figures 1 and 2 nor Suzuki et al., singly or in combination, teach or suggest at least these features of the claimed invention. Accordingly, Applicant respectfully submits that independent claims 16-23, which depend from claim 15 are also allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. Moreover, it is respectfully submitted that claim 28 is allowable at least by virtue of its dependence from claim 15.

Independent claim 25 is allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. in that claim 25 recites a combination of elements including, for example, “a second substrate having first and second surfaces, wherein the first surface is disposed against the first substrate; a non-transparent film coated on a periphery of the second surface of the second substrate to substantially block light emitted from the light source; and a sheet material disposed between the light source and the second substrate, wherein the non-transparent film does not overlap at least a portion of one edge of the sheet material.” Neither the related art shown in Figures 1 and 2 nor Suzuki et al., singly or in combination, teach or suggest at least these features of the claimed invention. Accordingly, Applicant respectfully submits that claim 25 is allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. Moreover, it is respectfully submitted that claim 30 is allowable at least by virtue of its dependence from claim 25.

Independent claim 26 is allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. in that claim 26 recites a combination of elements including, for example, “providing a second substrate having first and second surfaces, wherein the first surface is disposed against the first substrate; coating a non-transparent film on a periphery of the second surface of the second substrate to substantially block light emitted from the light source; and

disposing a sheet material between the light source and the second substrate, wherein the non-transparent film does not overlap at least a portion of one edge of the sheet material.” Neither the related art shown in Figures 1 and 2 nor Suzuki et al., singly or in combination, teach or suggest at least these features of the claimed invention. Accordingly, Applicant respectfully submits that claim 26 is allowable over the related art shown in Figures 1 and 2 in view of Suzuki et al. Moreover, it is respectfully submitted that claim 31 is allowable at least by virtue of its dependence from claim 26.

The Examiner cites the related art shown in Figures 1 and 2 as disclosing “(concerning claims 1 and 15)... a sheet material (10) disposed between the light source (20) and the second substrate (6), and at least a portion of one edge (such as the right edge) of the sheet material (10) is not directly under the black pattern (24) (the non-transparent film); (concerning claims 25-26) the black pattern (24) (the non-transparent film) does not overlap at least one edge (such as the right edge) of the sheet material (10).” The Examiner then states the related art shown in Figures 1 and 2 “does not expressly disclose a non-transparent film coated on periphery of the second surface (lower surface) of the second substrate.” In attempting to cure the deficiencies of the related art shown in Figures 1 and 2, the Examiner cites Suzuki et al. as disclosing “a liquid crystal display device having a shield tape (TAPE) is stuck to the lower face of the lower substrate (SUB1)... [and] the shield tape (TAPE)... is coated on the periphery of the lower face of the lower substrate.” In concluding with the rejection, the Examiner states it would have been obvious to “use a non-transparent black film coated on periphery of the lower surface of the lower substrate as claimed in claims 1, 15, 25, and 26 for preventing the light leakage from the back light and achieving an excellent display quality....”

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the references when combined. See M.P.E.P. § 2413. Applicant respectfully submits a prima facie case of obviousness has not been established with respect to the rejection of the aforementioned claims.

For example, the cited combination of references (i.e., related art shown in Figures 1 and 2 in view of Suzuki et al.) fails to teach or suggest at least “a non-transparent film on a periphery of the second surface of the second substrate... [and] a sheet material between the light source and the second substrate, wherein at least a portion of one edge of the sheet material is not directly under the non-transparent film” and “a non-transparent film coated on a periphery of the

second surface of the second substrate... [and] a sheet material disposed between the light source the second substrate, wherein the non-transparent film does not overlap at least a portion of one edge of the sheet material.”

Assuming, *arguendo*, and in a manner consistent with the Examiner’s interpretation of the cited references that: (a) the related art shown in Figures 1 and 2 shows a non-transparent film (24) formed on a surface of a substrate (6) that is not disposed against another substrate (4), wherein at least a portion of the right edge of sheet material (10) is not directly under (or does not overlap) the non-transparent film (24); and (b) Figure 9 of Suzuki et al. shows a non-transparent film (TAPE) is formed on a periphery of a surface of a substrate (SUB 1) that is not disposed against another substrate (SUB 2), Applicant respectfully submits the cited combination of the related art shown in Figures 1 and 2 in view of Suzuki et al. still does not teach or suggest the claimed invention.

More specifically, while Figure 9 of Suzuki et al. shows the non-transparent film (TAPE) extending to the leftmost edge of the substrate (SUB1), Suzuki et al. also states at column 13, lines 8-11 that “the shield tape (TAPE) is stuck through an adhesive layer to the lower face of the lower transparent glass substrate SUB 1 from the seal member SL to the end portion of the substrate SUB 1....”

Consistent with both the teaching of Suzuki et al. at column 13, lines 8-11 and at Figure 9, and with the Examiner’s interpretation of Suzuki et al., Applicant respectfully submits Suzuki et al. can reasonably be construed as teaching wherein the shield tape (TAPE) is not only provided at a periphery of the lower surface of the lower transparent glass substrate (SUB1), but also extends to the edges (end portions) along the periphery of the lower transparent glass substrate (SUB1). Absent any other evidence, Applicant respectfully submits Suzuki et al. cannot be reasonably interpreted as teaching or even suggesting wherein the shield tape (TAPE) extends only to edges along the fraction of the periphery of the lower transparent glass substrate (SUB1) actually shown in Figure 9.

In combining the related art shown in Figures 1 and 2 with Suzuki et al. to arrive at the claimed invention, the Examiner states it would have been obvious “to use a non-transparent black film coated on a periphery of the lower surface of the lower substrate.” In view of this statement, Applicant respectfully submits the Examiner essentially replaces the non-transparent film (24) of the related art shown in Figures 1 and 2 with the non-transparent film (TAPE) of

Suzuki et al. By doing so, the combination of the related art shown in Figures 1 and 2 in view of Suzuki et al. is necessarily provided with a non-transparent film extending to the edge of substrate (6) along the entire periphery of substrate (6).

Referring to the related art shown in Figures 1 and 2, at page 3, lines 17-20 of the present application, “the lower glass substrate 6 of the liquid crystal panel is formed larger than the upper glass substrate 4....” Therefore, in the structure defined by the cited combination of references (i.e., the related art shown in Figures 1 and 2 in view of Suzuki et al.), the right edge of sheet material (10), originally supplied by the related art shown in Figures 1 and 2, is necessarily arranged directly under (or overlapped by) the non-transparent film imported from Suzuki et al. Accordingly, Applicant respectfully submits the cited combination of references actually teaches away from the claimed combination of elements cited above. To reiterate, claims 1 and 15 recite, among other elements, “wherein at least a portion of one edge of the sheet material is not directly under the non-transparent film;” and claims 25 and 26 recite, among other elements, “wherein the non-transparent film does not overlap at least a portion of one edge of the sheet.”

Further, Applicants respectfully submit there is no suggestion, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the teachings of either the related art shown in Figures 1 and 2 or Suzuki et al. in any manner and obtain, for example, a non-transparent film formed on a surface of a substrate that is not disposed against another substrate, wherein at least a portion of one edge of sheet material is not directly under (or is not overlapped by) the non-transparent film, as required by the aforementioned claims. Interpreting Suzuki et al. to teach or suggest that the shield tape (TAPE) extends to only a portion of the edge of the lower transparent substrate (SUB1) could only be the result of an unreasonable inference of Suzuki et al., possible only in light of the Applicant’s claimed invention. Accordingly, Applicant respectfully submits the related art shown in Figures 1 and 2 has been combined with Suzuki et al. using the claimed invention as a template, without any objective reason to combine the references, via impermissible hindsight.

In the “Response to Arguments” section of the present Office Action, the Examiner states that “Applicant’s only arguments are as follows: 1) [t]he references fail to teach or suggest that a portion of one edge of the sheet material is not directly under the non-transparent (or the non-transparent film does not overlap a portion of one edge of the sheet material).”

In responding to the “first” argument, the Examiner states “[t]he... [related art shown in Figures 1 and 2] discloses that a sheet material (10) disposed between the light source (20) and the second substrate (6), and at least a portion of one edge (such as the right edge) of the sheet material (10) (that is a portion of one edge of the sheet material) is not directly under the black pattern (24) (the non-transparent film) (that is the non-transparent film does not overlap a portion of one edge of the sheet material).”

For reasons set forth in the paragraphs above, however, Applicant respectfully submits the fact that the related art shown in Figures 1 and 2 teaches a portion of sheet material (10) not directly under the black pattern (24) is irrelevant. More specifically, the black pattern (24), having characteristics disclosed by the related art shown in Figures 1 and 2, is not present within the combination of the related art shown in Figures 1 and 2 in view of Suzuki et al. as applied against the presently pending claims.

For example, in rejecting claims 1, 15, 25, and 26, the Examiner states that the related art shown in Figures 1 and 2 shows that “the black pattern (24) (non-transparent film) does not overlap at least one edge (such as the right edge) of the sheet material (10)” but does not show wherein the non-transparent film (i.e., the black pattern (24)) is “coated on a periphery of the second surface (lower surface) of the second substrate.” Due to the deficiency of the related art shown in Figures 1 and 2, the Examiner cites Suzuki et al. as teaching “a shield tape (TAPE)... stuck to the lower face of the lower substrate (SUB1)... and the shield tape (TAPE) is preferable black.... The shield tape (TAPE)... is coated on the periphery of the lower face of the lower substrate to block the light emitted from the light source.” The Examiner then concludes, presumably in view of Suzuki et al. that it would have been obvious “to use a non-transparent film coated on a periphery of the lower surface of the lower substrate [of the related art shown in Figures 1 and 2]... for preventing the light leakage from the back light and achieving an excellent display quality.”

Accordingly, Applicant respectfully submits that physical dimensions of the non-transparent film (i.e., the black pattern (24)) of the related art shown in Figures 1 and 2 relative to the lower substrate are modified by Suzuki et al. That is, Suzuki et al. modifies the non-transparent film (i.e., the black pattern (24)) of the related art shown in Figures 1 and 2 such that the non-transparent film (i.e., the black pattern (24)) is coated on a periphery of the lower surface of the lower substrate (6). As a direct result of structural modifications Suzuki et al.

introduces relative to the lower substrate (6) in the related art shown in Figures 1 and 2, Suzuki et al. also modifies the physical dimensions of the non-transparent film (i.e., the black pattern (24)) relative to the sheet material (10) of the related art shown in Figures 1 and 2.

As discussed above, it is respectfully submitted that Suzuki et al. fails to teach or suggest any actual dimensions of the shield tape (TAPE) and fails to teach or suggest where the shield tape (TAPE) does not overlap any underlying structure corresponding to the sheet material (10) of the related art shown in Figures 1 and 2. Accordingly, Applicant respectfully submits that any conclusion regarding the physical dimensions of the non-transparent film in the combination of the related art shown in Figures 1 and 2 in view of Suzuki et al. relative to the sheet material (10) of the related art shown in Figures 1 and 2 (left unmodified by Suzuki et al.) is necessarily arrived upon only with the benefit of the presently claimed invention via the impermissible use of hindsight reasoning.

Accordingly, Applicant respectfully requests the withdrawal of the rejection as a prima facie case of obviousness has not been established with respect to the present rejection under 35 U.S.C. § 103(a).

The rejection of claim 24 under 35 U.S.C. § 103(a) as being unpatentable over the related art shown in Figures 1 and 2 in view of Suzuki et al. and further in view of Kashima et al. is traversed and reconsideration is respectfully requested.

Independent claim 24 is allowable over the cited art in that claim 24 recites a combination of elements including, for example, “a second substrate having first and second surfaces, wherein the first surface is disposed against the first substrate... and a sheet material disposed between a light source and the second substrate, the sheet material comprising an uppermost sub-layer having a first length and at least one underlying sub-layer arranged under the uppermost sub-layer and having a second length, wherein the first length is substantially equal to the second length.” None of the cited references including the related art shown in Figures 1 and 2, Suzuki et al., or Kashima et al., singly or in combination, teach or suggest at least these features of the claimed invention. Accordingly, Applicant respectfully submits that claim 24 is allowable over the cited references. Moreover, it is respectfully submitted that claim 29 is allowable at least by virtue of its dependence from claim 24.

The Examiner cites the related art shown in Figures 1 and 2 as failing to disclose “the sheet material comprising an uppermost sub-layer having a first length and at least one

underlying sub-layer arranged under the uppermost sub-layer and having a second length, and the first length is substantially equal to the second length.” Moreover, the Examiner cites Suzuki et al. as failing to disclose “the sheet material layers have equal lengths.” In attempting to cure the deficiencies of the related art shown in Figures 1 and 2 and Suzuki et al., the Examiner cites Kashima et al. as teaching a “conventional backlight system... using diffusion sheet (25)... and prism sheet (26)... having equal lengths (see Fig. 11).” The Examiner then alleges “using equal lengths for the... prism sheet and the diffusion sheet would be easy to manufacture and would have sufficient luminance in a high efficiency.” The Examiner concludes the rejection by stating it would have been obvious “to use equal lengths for the...prism sheet and diffusion sheet as claimed in claim 24 for achieving sufficient luminance in a high efficiency.”

According to M.P.E.P. § 2144.02, the rationale to support a rejection under 35 U.S.C. § 103 may rely solely on logic and sound scientific principle. However, when an Examiner relies on a scientific theory, evidentiary support for the existence and meaning of that theory must be provided.

From the Examiner’s theory, it appears that providing a prism sheet and a diffusion sheet having equal lengths as taught by Kashima et al. would enable one of ordinary skill in the art to achieve “sufficient luminance in a high efficiency,” thus rendering the claimed invention obvious.

Applicant respectfully submits, however, evidentiary support for the existence and meaning of the Examiner’s theory outlined above must be, but has not been, provided. Furthermore, Applicant respectfully submits there is no relationship between relative lengths of adjacent prism and diffusion sheets and the ability to achieve “sufficient luminance in a high efficiency,” as asserted by the Examiner. In the absence of any evidentiary support, Applicant respectfully submits the related art shown in Figures 1 and 2, Suzuki et al., and Kashima et al. have merely been combined using the presently claimed invention as a template via improper hindsight reasoning.

In the “Response to Arguments” section of the present Office Action, the Examiner states that “Applicant’s only arguments are as follows... 3) [t]he references fail to teach or suggest that the sheet material comprising uppermost sub-layer and underlying sub-layer (equal length) having evidentiary support.”

In responding to the “third” argument, the Examiner states “[t]he evidentiary support is that... [Kashima et al.] discloses (col. 1, lines 20-33; Fig. 1) that the structure having diffusion sheet and prism sheet (equal length) is a typical conventional backlight system structure.”

It is respectfully submitted, however, that the mere existence of diffusion and prism sheets with particular alleged dimensions does not constitute evidentiary support for the existence and meaning of the theory that providing a prism sheet and a diffusion sheet having equal lengths would enable one of ordinary skill in the art to achieve “sufficient luminance in a high efficiency.” After reviewing Kashima et al. Applicants respectfully submit that the specification of Kashima et al. is silent with respect to relative dimensions of sub-layers within a sheet material. Moreover, it appears that Kashima et al. discloses wherein “sufficient luminance in a high efficiency” is attributable to a combination of light source, a light guide, a polarization light splitter, and a beam deflector (see Kashima et al., column 5, lines 14-27).

Moreover, it appears from the rejection and reasoning above that the Examiner relies exclusively upon what is actually shown in Figures 1 and 11 to find support for the relative physical dimensions of the sub-layers within the presently claimed sheet material. Indeed, it is respectfully submitted that specification of Kashima et al. is silent as to the relative dimensions of the sub-layers within its sheet material. Accordingly, Applicant respectfully submits that proportions of features in the drawings of Kashima et al. are not evidence of actual proportions (see M.P.E.P. § 2125). Therefore, Applicants respectfully submit Kashima et al. cannot be relied upon for purposes required by the present rejection under 35 U.S.C. § 103(a).

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If the Examiner deems that a telephone conversation would further the prosecution of this application, the Examiner is invited to call the undersigned at (202) 496-7500.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: March 9, 2004

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